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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/806,604	08/03/2001	Kamron M. Wright	03-L0-6740	3022

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EXAMINER	
ELKASSABGI, HEBA	

ART UNIT	PAPER NUMBER
2834	

DATE MAILED: 06/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/806,604	WRIGHT ET AL.	
	Examiner	Art Unit	
	Heba Elkassabgi	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondenc address --

Peri d f r Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 March 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 March 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings were received on 03/03/2004 of figures 1-5 are acknowledged and will replace informal drawings submitted on 04/02/2001.

2. However, the drawings are objected to under 37 CFR 1.83(a) because they fail to show in detail the "recessed fins positioned between the outer and inner surface of the end shield" as described in the specification. The figures clearly illustrate the recessed fins on the outer surface of the endshield however they do not show the recessed fins positioned in the inner surface of the endshield. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement-drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as

per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

1. Objection to the specification is withdrawn in light of applicant's amendment and remarks.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1,2,3,10,12,16,17, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Permuy (US Patent 6031306) and further in view of Harms et al. (US Patent 4668898).

Permuy discloses in Figures 1 a motor end shield assembly having a shaft opening (38) configured to receive a motor shaft (10) and an end shield made of aluminum (circular frame 24), that is configured as a heat sink, having an outer surface and an inner surface, in which the outer surface including a plurality of fins (32) raising from substantially flat raised portion and a control assembly (panel 29) in contact with

the inner surface, and a power assembly (40 and 42) are connected to the control assembly (panel 29). The end shield (circular frame 24) has a plurality of openings (A) that extend through the end shield to for attaching to the motorized fan. The inner surface has a substantially flat raised area (B) for contacting the control assembly (panel 29). The control assembly (panel 29) comprises of a control board (circuit board 16) and a plurality of power transistors (36) connected to the control board (circuit board 16). However, Permuy does not disclose recessed fins are on the interior of the end shield (heat sink).

Harms discloses in figures 4 and 7 a heat dissipating enclosure (heat sink) having heat radiating fins (85) on the exterior and on the interior heat radiating fins (63) extending from the interior of the heat sink (59) which extends from the enclosure, in order to increase the ability to dissipate more intense heat.

Permuy and Harms et al. are from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the other.

It would have been obvious to one of ordinary skill in the art to combine the reference of Permuy structure of the motor endshield and with the radiating fins of Harms et al. in order to dissipate more heat.

In regards to claim 21 the method of assembling is inherent to the structure of the motor as claimed above.

2. Claims 11/1 and 18/1 are rejected under 35 U.S.C. 103(a) as being unpatentable over Permuy (US Patent 6031306) and Harms et al. (US Patent 4668898) as applied to claims 1 and 16 above and in further view of Search (US Patent 972929).

Permuy and Harms et al. substantially disclose the claimed invention. However, Permuy and Harms et al. do not disclose a cap plug.

Search discloses a cap plug (man hole 34) opening that extends through an endshield (12) in which the cap plug (34) is closed by a cap plug covering (lid 35), in order to repairs may be easily attend to.

Permuy, Harms et al., and Search are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious to one of ordinary skill in the art to combine the reference of Permuy structure of the motor endshield and with the radiating fins of Harms et al. in order to dissipate more heat and with the structure of Search in order to have an easer access to the internal compartments of the motor.

3. Claims 13,14, 24, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Permuy (US Patent 6031306) and Harms et al. (US Patent 4668898) as applied to claims 3/1 and 24/21 above and in further view of Takagi et al. (US Patent 6081056).

Permuy and Harms et al. substantially discloses the claimed invention. However, Permuy and Harms et al. do not show a power assembly comprises a power board and an insulator positioned between the power board and the control board.

Takagi et al.disclsoes a power board (22) having an insulator positioned between the power board and the control board (21), with clamp bars (43) that are between the power assembly board (22) and the control board (21) and the clamp bars (43) extend through to the insulate between the power board and the control board, n order to stabilize the circuit board.

Permuy, Harms et al., and Takagi et al. are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious to one of ordinary skill in the art to combine the reference of Permuy structure of the motor endshield and with the radiating fins of Harms et al. in order to dissipate more heat and the structure of Takagi et al. in order to have a stabilized circuit board.

In regards to claim 24-25 the method of assembling is inherent to the structure of the motor as claimed above.

4. Claims 4,5,6,7,8,9,15,19,20,22,and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Permuy (US Patent 6031306) and Harms et al. (US Patent

4668898) as applied to claims 1,3/1,16, and 21 above, and further in view of Liberati (US Patent 5383092).

Permuy discloses in Figures 1 a motor end shield assembly having an end shield (circular frame 24) having an outer surface and an inner surface, in which the outer surface including a plurality of fins (32) and a control assembly (panel 29) in contact with the inner surface, and a power assembly (40 and 42) are connected to the control assembly (panel 29). The end shield (circular frame 24) has a plurality of openings (A) that extend through the end shield to for attaching to the motorized fan. The inner surface has a substantially flat raised area (B) for contacting the control assembly (panel 29). The control assembly (panel 29) comprises of a control board (circuit board 16) and a plurality of power transistors (36) connected to the control board (circuit board 16). However, Permuy does not disclose that the end shield is a heat sink and that recessed fins are on the interior of the heat sink.

Harms discloses in figures 4 and 7 a heat dissipating enclosure (heat sink) having heat radiating fins (85) on the exterior and on the interior heat radiating fins (63) extending from the interior of the heat sink (59) which extends from the enclosure, in order to increase the ability to dissipate more intense heat.

Liberati discloses in Figure 2 and 3 having an end shield which comprises as a heat sink (134), in which a control assembly (26 and 49) further comprises a thermal pad (160) between the power transistors (46) and the end shield (34) in order to ensure good heat transfer from the transistors to the heat sink, in which a plurality of bolt openings extend through the end shield. The power transistors (46) having a plurality of

contacting stripes (leads 49) which extending substantially parallel to the circuit board (26). Furthermore the transistors have a top surface, bottom surface, a back, and a tab (56) which extends along from the back to the top surface of the transistor (46) and that the tab (56) contacts the circuit board (26). The power transistor (46) includes a front in which the leads (49) extend from a front of the power transistors (46) at a position closer to a bottom surface than to a top surface. Further more, the tabs (56 contact a thermal pad (160), which provides good heat conductivity with the end shield (34).

Permuy, Harms et al., and Liberati are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious to one of ordinary skill in the art to combine the structure of Permuy of the motor and with the radiating fins of Harms et al. in order to dissipate more heat and with the structure of Liberati of the motor having a thermal pad in order to provide good heat conductivity through the end shield.

In regards to claim 22-23 the method of assembling is inherent to the structure of the motor as claimed above.

Response to Arguments

1. Applicant's arguments with respect to claims 1-25 have been considered but are moot in view of the new grounds of rejection.

Conclusion

Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Heba Elkassabgi whose telephone number is (571) 272-2023. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571) 272-2044. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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